IT Business Cases in Local Government

An Action Research Study

Nielsen, Peter Axel; Persson, John Stouby

Published in:
Proceedings of the 45th Annual Hawaii International Conference on System Sciences (HICSS-45)

DOI (link to publication from Publisher):
10.1109/HICSS.2012.393

Publication date:
2012

Document Version
Accepted author manuscript, peer reviewed version

IT Business Cases in Local Government: An Action Research Study

Peter Axel Nielsen
Department of Computer Science
Aalborg University
pan@cs.aau.dk

John Stouby Persson
Department of Computer Science
Aalborg University
john@cs.aau.dk

Abstract

Effective management of value creation with information technology (IT) is increasingly important for local governments (e.g., municipalities). The business case is a tool that has increased popularity in both the public and private sector to support the management of value creation with IT. However, experiences from local government reveal difficulties in developing effective IT business cases beyond simple cost savings. Based on collaborative action research with Danish municipalities we present insights on contemporary IT business case practices. Based on these insights we formulate lessons for business case practices in local government that we have incorporated into a business case method; that has subsequently been evaluated by IT managers in local government. These lessons have been synthesized into the four principles: minimal contents, benefits ownership, dynamic utility, and social commitment. We argue that these principles improve the content, development, and use of IT business cases in local government.

1. Introduction

Local governments such as municipalities are facing numerous problems in their efforts to become more mature in terms of e-government [1-3]. E-government should provide public value in terms of outcomes, services, satisfaction, and trust [4] yet significant management problems are evident by the high failure rate for e-government initiatives [5].

IT management, carried out by a chief information officer or manager of IT is instrumental in organizational exploitation of IT [6]. A field survey at a US municipal city government showed that leadership, strategic planning, and customer/market focus had a positive impact on the information system, and service quality [7]. That supports the contention that leadership drives the better utilization of IT and can create many benefits for public organizations. However, researchers have documented numerous IT management issues in both general and country specific public sector investigations [8-11]. Political contexts involve a large number of stakeholders and multiple tasks and considerations for IT management [4, 12]. This indicates that IT management challenges may be different from those already known from commercial companies [9]. Notable differences making IT management more difficult in public organizations are the *increased focus on accountability, openness, representativeness, and equity, more external and vertical linkages, incremental rather than holistic planning due to constraints in budgeting and purchasing, extreme risk aversion due to potentially more damaging consequences of errors from risky technologies, and divided authority over IT decisions due to legal, civil services, and political constraints* [13].

While extensive research literature is available on supporting and improving IT management in private organizations, much less research considers the specifics of public organizations. A common tool used in both public and private organizations for managing the creation of value with IT is the business case [14]. In Gil-Garcia and Pardo's investigation of e-government success factors they studied the reasoning behind business cases [15]. They argue that a robust empirical base particularly for business case strategies in public organizations would provide public managers with a more informed roadmap for their efforts [15]; that empirical base is lacking so far.

Heeks and Bailur's [16] analysis of the e-government research literature revealed shortcomings on *what* practitioners should do and even further shortcomings on *how* practitioners should take action. Yildiz's literature review concludes that most e-government studies examine the outputs of e-government rather than the processes of e-government [17]. This suggests that we need further research to examine and explain the processes of e-government development. To address these concerns we adopt an action research methodology [18-21]. Action research has proven valuable in investigating organizational processes with particular emphasis on how practitioners can and should take action. We report on an action research study on IT business cases in Danish municipalities that we carried out as part of a larger collaborative practice research [22] effort.

In this study, we collaborated with a group of municipal IT managers and this led to identifying IT business cases as a key concern in their practice. Following this insight, we initiated improvement activities for their IT business case practices in pursuit of the research question:

How can we improve IT business case practices in local governments?

The paper is structured as follows. The next section elaborates on the adopted theoretical framing for the study. The following section summarizes our action research method and subsequently in section 4, we present findings from our improvement activities of IT business case practice in Danish municipalities. We discuss these findings' contribution to IT management in local government and conclude with a summary of our results.

2. Theoretical framing

We have based the theoretical framing of the action research study on the existing literature on IT business cases. In this study, the concept of a 'business case' refers to an artifact in the form of a document specifying the main rationale behind the expected value and cost of an IT investment for the adopting organization. We adopt this definition from Danish central and local government practices and from previous research on business cases [14, 23, 24].

Only a limited amount of empirical investigations of IT business cases is available, e.g., in the context of cross-organizational enterprise systems [23, 24], digital library investment [25], evaluation of investment in nonprofit organizations [26], and strategic IT investment decisions [27]. The most prominently published approach to developing an IT business case in the information systems literature is, that of Ward et al. [14], which has its offset in benefits management [28]. Benefits management is receiving increasing attention in e-government research and is an area well aligned with local governments' need for more effective management of value creation with IT.

The approach to developing IT business cases by Ward et al. [14] is based on research of both private and public organizations and features six steps indentifying the: (1) business drivers and investment objectives, (2) benefits, measures, and owners, (3) structure of benefits, (4) organizational changes enabling benefits, (5) explicit value of each benefit, and (6) costs and risks. According to Ward et al. [14], their approach differs from most business case approaches in the following ways:

- Non-financial benefits are also recognized.
- Measures are identified for all benefits, including subjective or qualitative benefits.
- Evidence is sought for the size of the benefits included.
- An owner is identified for each benefit.
- Benefits are explicitly linked to both the IT and the business changes that are required to deliver them.
- Owners are identified for ensuring the business changes are achieved.

These characteristics seem appropriate for IT management within local governments. The recognition of non-financial benefits corresponds well with public sector organizations' non-profit nature and their political agenda [29]. Public sector organizations are likely to estimate the potential value of an IT investment by looking at both its economic value and its political value [30]. The measuring of benefits supports informed and documented agreements between IT management on the one hand and on the other hand the parts of the affected public organization. This may also facilitate later benefits evaluation. Linking benefits to both the IT and business changes is highly relevant in addressing the difficulties of change in public sector organizations [31]. Finally, the ownership of benefits and business change corresponds well with the frequently divided authority over IT decisions [13] and large number of influential stakeholders in public sector organizations [12].

3. Research method

Action research is an appropriate research method when the research question addresses organizational processes and how practitioners take action and improve their action [18-21]. Our action research effort to improve the practice of using IT business cases was part of a large research project in collaboration with Danish municipalities. The purpose of the research project we agreed with the client organizations to be the improvement of IT management in Danish municipalities. The project as a whole follows what Mathiassen [22] has called Collaborative Practice Research, which is an action research methodology [18-20] that serves as a general framing of research activities. Collaborative Practice Research offers a research methodology assisting us in connecting the need to understand the current IT management practices with the need to improve IT management in the municipalities. It also offers a structure for the research organization allowing the action researchers and the IT managers to collaborate.

One of the three central IT management problems identified in the research project was how to create value with IT in the municipalities. The research

project established a working group for this particular problem consisting of representatives from 4 municipalities (ranging from 4,000 to 30,000 employees) and 2 consultancy firms and action researchers from a university [32]. This working group identified business cases as a key concern in the municipalities IT management. This appreciation of the problem situation was the first step in the action research process.

Based on the diagnosis of the problem situation, the working group initiated improvement activities for the municipalities' IT business cases. As researchers we considered: (1) the argued value of business cases for IT management [14], (2) the lack of empirical knowledge on business cases in e-government [15], and (3) a lack of research on how practitioners should take action in the e-government development process [16, 17]. We then initially adapted a business case method based on the approach by Ward et al. [14]. We improved the method in three iterations based on explicit evaluations in three municipalities. Following the iterations, we closed the action research process when the working group had assessed the method's usefulness. The working group then decided to elicit the method as a handbook available to other municipalities.

The action research process had eight key encounters summarized in Table 1, which were either a full day workshop or evaluation of the business case method at a municipality. Preceding each encounter, we wrote a study protocol inspired by the case study protocol advocated by Yin [33]. Our study protocol documented initial thoughts and decisions for each of the action research criteria suggested by Nielsen [34]: roles, documentation, control, usefulness, frameworks, and transferability.

We documented all encounters through audio recordings, filed notes and minutes; and we distributed the minutes to all participants. Following each encounter an audio recoded debriefing meeting [35] was conducted among the participating researchers and a reflective diary entry [36] on the encounter and the period before the encounter was written by a participating researcher. We integrated the data analysis into the action research process, in particular through the debriefing meetings following each encounter. We analyzed the municipalities' business cases and related documents between the encounters and we then presented and validated the results at a workshop. This integration of data analyses throughout the action research process allowed continuous feedback as we presented our results to the practitioners. The documentation in the form of debriefings and research diaries also allowed later critical revisits to our analyses and decisions.

Date	Encounter	Participants
2009-11-11	Workshop on the research project organization and improvement focus	4 IT/Project managers (3 municipalities), 2 consultants, 5 researchers
2009-12-16	Workshop on business case models and experiences	4 IT/Project managers (2 municipalities), 2 consultants, 6 researchers
2010-02-08	Workshop on the business case content, development and context	6 IT/Project managers (4 municipalities), 2 consultants, 4 researchers
2010-06-29	Evaluation of business case method at municipality 1	2 IT/Project managers, 2 researchers
2010-08-18	Evaluation of business case method at municipality 2	2 IT/Project managers, 2 researchers
2010-10-13	Workshop on further development of the new business case method	5 IT/Project managers (4 municipalities), 1 consultant, 5 researchers
2010-10-26	Evaluation of business case method at municipality 3	3 IT/Project managers, 2 researchers
2010-12-09	Workshop on benefits realization based on a business case	2 IT/Project managers (2 municipalities), 2 consultants, 4 researchers

Table 1: the action research encounters

4. Findings

In the following, we present our findings from the problem formulation and improvement activities for IT business case practices in Danish municipalities. Following these two sections, we present our lessons learned from these activities.

4.1 Problem formulation

The first encounters for problem diagnosis revealed that a business case could have different forms and purposes across municipalities and even within a single municipality. While the literature claims that the main purpose of developing an IT business case is to obtain funding approval for the financial investment [14], this was not always the dominant issue in the municipalities. The municipalities' investment decision was in some cases already made and they developed a business case post hoc to justify and promote the IT investment decision internally. Sometimes central government provided a business case that could serve

either as the investment decision or as basis for the development of a new business case that included the specifics of the municipality. We identified three different types of business cases relative to a municipality's IT investment decision illustrated in Figure 1.

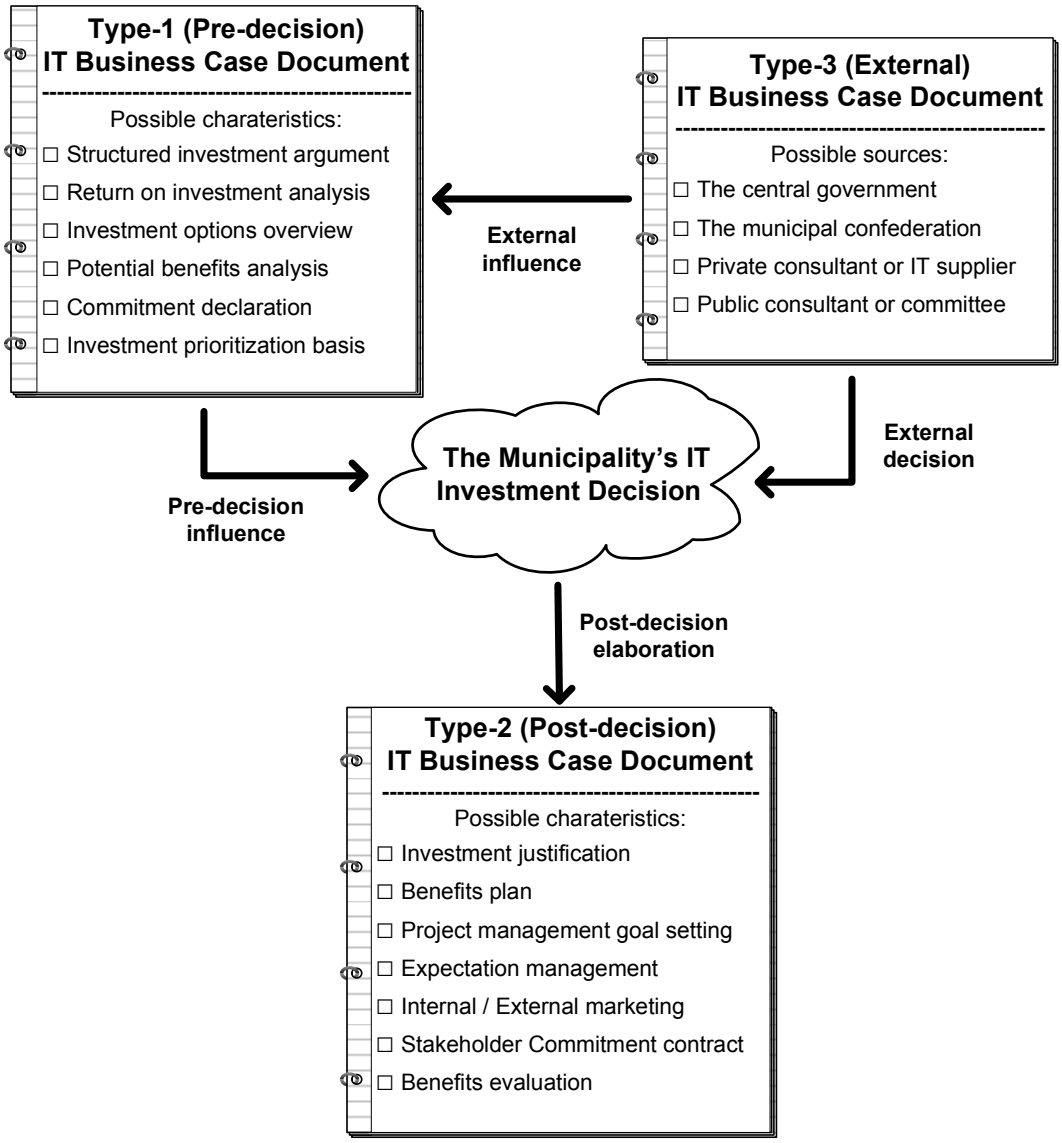

Figure 1: three different types of business cases relative to a municipality's IT investment decision

The municipalities develop Type-1 IT business cases before their municipal managers decide on the given IT investment. This type is in accordance with the literature where the main purpose of developing an IT business case is to obtain funding approval for the financial investment [14]. Thus, a Type-1 business case influence or informs the municipality's IT investment decision. Type-1 business cases appeared usually as very minimalistic in terms of content, e.g., characterized by only a simple return on investment analysis.

The municipalities develop Type-2 IT business cases after their municipal managers have decided on the given IT investment. Thus, a Type-2 business case elaborates or justifies the municipality's investment decision. Type-2 business cases are the most common in the municipalities, and IT project managers sometimes request a business case because it is

required by the project management method, e.g. Prince2 [37], adopted by several municipalities.

Other public or private organizations develop Type-3 IT business cases before the municipal managers have decided on the given IT investment. Thus a Type-3 business case may influence or in some cases force the municipal managers to adhere to an externally decided IT investment (e.g., from a central government agency). A Type-3 business case may also influence a Type-1 business case, e.g., if it is from a private consultant or IT supplier. Municipalities can transform Type-3 IT business cases into a Type-1 or Type-2. They can also transform a Type-1 into a Type-2, but many of their business cases are not transformed at all. In summary, we found that IT business cases in the municipalities had different forms that could change over time relative to the municipalities IT-investment decision. However, the municipalities did not consider a Type-3 IT business case very useful in ensuring realization of its proposed value without transformation into a Type-1 or Type-2.

The initial problem diagnosis further revealed a concern among the IT managers that the very extensive business case method of central government was much too inclusive, complex, and expensive to apply. This concern was based on the IT managers' experiences in presenting business cases to busy municipal managers where time and effort did not allow for comprehensive documents. These managers all belong to the same organization and thus shared significant knowledge already, with no need to document further in a business case. More importantly, the level of trust between the managers allowed for binding agreements to be made without extensive formalization of contracts or business cases. Finally, the size of the IT investments in the municipalities did not justify extensive work on a business case, as it would be disproportionate compared to the actual investment.

The three municipalities' different methods for developing a business case had 12, 14, and 15 elements or steps while the central government's method had 40. We did a comparison of the central government's method with the three municipalities' and presented this at the second encounter. Our comparison identified an overlap of six elements: (1) Business background, (2) Business problem, (3) Financial consequences, (4) Risks, (5) Milestone plan, and (6) Key performance indicators. This analysis thus showed a limited agreement on what a business case for a municipality should include.

Another concern raised by the IT managers was the difficult appreciation of non-financial value in a business case. We conducted a value-focused discourse analysis of interviews with the three municipalities' IT manager and their chief executive officer. Our analysis applied a model of IT value in public administration [12] and we presented its results at the third encounter. The analysis revealed a predominance of foundational values relating to cost-efficiency considerations. However, their value discourses also included policy formulation, democratic, service, internal, and external values.

4.2 Improvement

Our analyses of how the municipalities' developed their business cases suggested a need for a new and leaner IT business case method, which addressed their needs for both a Type-1 and Type-2 business case (see Figure 1). Our literature review of business cases identified the approach by Ward et al. [14] presented in Section 2 as a basis for improving their current practices. Ward et al.'s approach has six steps that largely covered the shared elements from the anlaysis of the municipalities' business cases and it allows for non-financial benefits. We translated the method to Danish and adapted it to the municipal context, e.g., by referring to the municipality as an organization instead of a business. We iteratively (re-)designed the business case method, presented and applied it, and then evaluated it through the fourth, fifth, and seventh encounters. Following these encounters, each of the three municipalities has initiated their own experimentation by applying the method to develop new business cases. They have shared their experiences at the sixth and eighth encounter. The benefits grid by Ward et al. that distinguishes between benefits by stop doing things, do things better, and do new things and also explicates each benefit as financial, quantifiable, measurable, and observable has in particular proved to be useful.

The resulting method was explained in four steps. One step was a condensation of the three steps for developing the benefits grid [14]. These three steps were "Step 3: Structure the benefits", "Step 4: Identifying organizational changes enabling benefits", and "Step 5: Determine the explicit value of each benefit". The four resulting steps are: (1) define motivation and investment objectives, (2) identify benefits, measures, and owners, (3) structure the benefits, and (4) identify costs and risks. This method was intended to address the needs in most municipal business case. Unique information may be included as links to other knowledge resources. We specified and exemplified each of the four steps for the municipalities' use in a brief handbook made available to all municipalities.

4.3 Lessons learned

We have identified four lessons based on the problem formulation and improvement activities. We incorporated each lesson into the business case method allowing for their evaluation in the municipalities' IT business case practice.

Lesson: Municipal organizations prompt minimalistic IT business cases. The idea that a business case should be comprehensive seems to have come either from standardization work with the national business case method or from the very wide scope of existing business case methods. Municipalities have relatively small IT budgets prompting minimalistic business cases scaled to the situation and to the size of the budget. The development of a comprehensive business case may easily become disproportionate relative to the budget of the considered IT investment. Relevant actors are diverse and come from the political parts, the administrative parts, and the IT-service parts of the municipality. All actors have or should have the possibility to comprehend the business case and its related costs as well as expected benefits. However, the involved actors all belong to the same organization and thus share significant knowledge in the outset; knowledge which need not be documented in a business case. Furthermore, in some municipalities, the level of trust allows commiting agreements to be made without extensive formal documentation in a business case. Finally, IT managers requested the minimalistic business cases based on their experiences in presenting them to overburdened decision makers where tight meeting schedules did not allow for comprehensive documents to be read. We incorporated this lesson in our method by featuring only four steps: (1) Define motivation and investment objectives, (2) identify benefits, measures, and owners, (3) structure the benefits, and (4) identify costs and risks.

The evaluation of the business case method in the three municipalities revealed that IT and project managers considered the included content very relevant. The municipalities had different suggestions for additional content, but to increase transferability between municipalities, these were not included in the business case method. This also illustrates the temptation of making a business case method comprehensive based on elements that could be nice to know in some situations or inspired from specific needs experienced from developing a difficult business case.

Lesson: Municipal managers found the concept 'benefits owner' meaningful and necessary. IT project managers are keen that the adopting organization has the major responsibility for realizing benefits. None of the business case methods used initially in the municipalities, featured benefits ownership in any way. In the business cases we reviewed, benefits were usually presented as a common good to the municipality with very little clarity as to who was responsible for their realization. This ownership could be with the managers for the particular administration or department of the municipality. An immediate implication is the distribution of benefits realization to the department where the organizational changes are to take place. Benefits realization is difficult to manage remotely and influential actors may lack commitment to realize benefits during or after the IT project. With this ownership, they have an additional incentive to engage in the organizational changes required to realize the benefits. We incorporated this lesson in our method by requiring an owner of each benefit in the grid, documenting a specific actor's commitment to the organizational change required for realizing the benefit.

The evaluation of the business case method revealed that the IT and project managers had difficulties identifying benefit owners. This difficulty could however reflect their previous practice of not specifying benefit owners, but instead present benefits as a common good to the municipality that they assume would be realized with the IT-based system's implementation. Despite these difficulties, the IT and project managers found the concept meaningful and necessary because the identification of benefit owners clarifies potential problems in a project's later benefits realization.

Lesson: Municipalities often ignore the dynamic utility in a business case. The business case may appear in different forms in relation to both the investment decision (cf. Figure 1) and in relation to benefits management [28]. The business case's formalized and rational argumentation for an IT investment is also usable in scoping, designing, deciding, evaluating, implementing, and realizing benefits. The municipalities could therefore further capitalize on their business case development by considering its utility beyond the IT investment decision. We incorporated this lesson in our method by providing an easy overview of benefits. The brevity of business cases also support dynamic utility by easing updates when conditions and benefits change dynamically (yet in a controlled manner) during the course of the IT project and the following benefits realization.

In the evaluation of the business case method the involved IT and project managers considered the focus on later benefits realization very important. Their needs for a business case are much more that of Type-2 than Type-1 (see Figure 1). Dynamic utility is important in a Type-2 by itself, but it is also essential in the business case developers' transformation of a Type-1 or Type-3 into a Type-2.

Lesson: Building social commitment is important, but also difficult in municipalities' IT business case development. In municipalities, it is a complex process to decide on an IT investment and on its benefits. Developing the business case will often be difficult, but establishing the commitment to a business case and hence make a decision on an IT investment is a complex undertaking. In municipalities, the influential stakeholders to an IT investment often have ill-defined formal hierarchical relationships. Compared to hierarchical organizations this requires influential stakeholders' social commitment to the realization of benefits from an IT investment. We incorporated this lesson in our method by guiding municipal managers, potential information systems users, and other actors who are affected that they should help identify, estimate, measure, and realize the expected benefits.

The evaluation of the business case method revealed some resistance by project managers towards involving line managers affected by an IT investment in estimating benefits for a business case. The project managers feared that these managers' estimates would be too pessimistic making the business case less convincing - even though, the line managers in the end are the ones needed to realize the planned benefits. However, IT and project managers considered the business case method's inclusion of non-financial benefits useful for achieving social commitment from line managers affected by an IT investment. They appreciated the opportunity to describe benefits in non-financial terms because decentralized municipal managers often fear the risk of having all documented financial benefits taking by central management with no consideration of whether benefits was realized or not. Financial benefits were however still the main concern of IT and project managers in creating and maintaining the commitment of top management to the IT investment described in the business case.

5. Discussion

In the following, we review the findings from the action research study in relation to our research question: How can we improve IT business case practices in local governments? In Section 1 we argued with [15-17] that we need knowledge on business cases in e-government and on how practitioners can manage their e-government initiatives. With our action research in Danish municipalities we have contributed with empirical knowledge on business cases in e-government, cf. [15], and contributed to the limited research on how practitioners should take action in the process of e-government, cf. [16-17]. We have formulated lessons for business case practices in local government, and we have incorporated these lessons into a business case method. Through the action research IT managers in local governments have evaluated the lessons and the method. The lessons have been synthesized into the principles of: minimal contents, benefits ownership, dynamic utility, and social commitment for improving the content, development, and use of IT business cases in local government.

The principle of minimal contents: A local government IT business case should be minimalistic and just contain sufficient contents for making an informed decision as well as an agreement between the affected actors. In a Type-1 business case (see Figure 1) minimalistic refers to the minimum amount of documented content required for deciding on the proposed IT investment, depending on the level trust and shared knowledge among the actors involved in the decision process. In a Type-2 business case minimalistic refers to the minimum amount of documented content required for establishing binding commitment from named individuals regarding their responsibilities in the organizational changes required for benefits realization. In both types of business cases the minimum amount of documented content is achieved through iterative development of the business case based on interactions with decision makers and organizational change agents. This principle is comparable to the new trend in software development moving from the extensive planning- and documentation-driven methods towards the agile and light-weight methods [38, 39]. Minimalistic business cases and the following project management may not only facilitate the internal IT management in a local government organization, but also ease its ability to collaborate with agile system development companies. An ability to collaborate with such agile companies not only introduces more vendor options but also an opportunity to select vendors that are more successful in their software development endeavours [39, 40].

The principle of benefits ownership: The managers in local government and other actors affected by an IT investment are potential owners of the

benefits in a business case. A benefits owner should be involved in the business case development and help identify the type and size of the benefit as well as how it should be measured. Without this specification of ownership, influential actors may be insufficiently committed to realizing benefits during and after the IT project. This principle corroborates a similar point made by Ward et al. [14], defining a benefits owner as an individual who personally gains or whose department gains from the IT investment. However, our research has shown that a benefits owner could also be someone that is influential in later benefits realization. It depends on the organizational culture [41] and level of management influence in the organization [42]. Many departments of local government have several simultaneous goals and agendas; hence, we should not see the benefits owners solely as managers in a hierarchical organization.

The principle of dynamic utility: A business case contains a formalized and rational argumentation for an IT investment (either Type-1 or Type-2), but local government may also utilize it for other purposes: scoping, designing, deciding, evaluating, implementing, and realizing benefits. The business case should be useful for all of these different purposes and not only in the local government's decision-making. The IT business case may help strengthen different benefits realization capabilities in planning, delivery, review, and exploitation [43] in local government organizations. The business case may be particularly helpful after the IT investment decision in managing expectations from both the affected organization and IT project. Thus, it is important to place a business case in the context of benefits realization activities and make it reflect that local government organizations realize benefits through technical and organizational change over time. Finally, the business case may serve as an offset for the valuable, but rarely practiced post mortem evaluation of IT projects [44].

The principle of social commitment: The development of an IT business case in local government involves both formal and informal negotiation and problem-solving. Facilitating these processes supports the creation and maintenance of social commitments. Social commitment is a relation between at least two actors, where one actor is committed to another actor to carry out an act, potentially witnessed by a third actor [45]. The frequently divided authority over IT decisions [13] and large number of influential stakeholders in public sector organizations [12] makes IT business case development and use particularly difficult. Previous research has also argued that commitment is an important issue in e-government projects as it may change for various reasons over the course of the project [46].

6. Conclusion

We have applied action research to study how we can improve IT business case practices in local government. Our action research has led us through several iterations through which we have elicited lessons and then gradually designed a business case method for Danish municipalities. Through these iterations, we have collected empirical data about the problem situations, the lessons, and the method's usefulness. To answer the research question: How can we improve IT business case practices in local governments? We have explained the lessons and how they came from practice in the municipalities.

- Municipal organizations prompt minimalistic IT business cases.
- Municipal managers found the concept 'benefits owner' meaningful and necessary.
- Municipalities often ignore the dynamic utility of business cases.
- Building social commitment is important, but also difficult in municipalities' IT business case development

From the lessons, we have been seeking transferability to other similar municipal circumstances and described four principles to guide IT managers working with IT business cases in local governments. The principles are:

1. The principle of minimal contents.
2. The principle of benefits ownership.
3. The principle of dynamic utility.
4. The principle of social commitment.

We have also incorporated these four principles in our method for IT business cases for local governments. Further research with business cases in local governments would have to look in more detail at the diffusion and deployment of such a method in several organizations. A significant step would be possible by investigating how local governments, e.g., across several municipalities, could collaborate on business cases and IT projects thus forming larger conglomerates with multi-agent business cases.

7. References

[1] M. Al-Sebie and Z. Irani, "Technical and organisational challenges facing transactional e-government systems: an empirical study," *Electronic Government,* vol. 2, pp. 247-276, 2005.

[2] K. Layne and J. Lee, "Developing fully functional E-government: A four stage model," *Government Information Quarterly,* vol. 18, pp. 122-136, 2001.

[3] M. J. Moon, "The evolution of e-government among municipalities: rhetoric or reality?" *Public Administration Review,* vol. 62, pp. 424-433, 2002.

[4] M. Grimsley and A. Meehan, "e-Government information systems: Evaluation-led design for public value and client trust," *European Journal of Information Systems,* vol. 16, pp. 134-148, 2007.

[5] S. Goldfinch, "Pessimism, computer failure, and information systems development in the public sector," *Public Administration Review,* vol. 67, pp. 917-929, 2007.

[6] D. F. Feeny and L. P. Willcocks, "Core IS capabilities for exploiting information technology," *Sloan Management Review,* vol. 39, pp. 9-21, 1998.

[7] V. R. Prybutok, X. Zhang and S. D. Ryan, "Evaluating leadership, IT quality, and net benefits in an e-government environment," *Information & Management,* vol. 45, pp. 143-152, 2008.

[8] J. W. Swain, J. D. White and E. D. Hubbert, "Issues in public management information systems," *American Review of Public Administration,* vol. 25, pp. 279-296, 1995.

[9] S. L. Caudle, W. L. Gorr and K. E. Newcomer, "Key information systems management issues for the public sector," *MIS Quarterly,* vol. 15, pp. 171-188, 1991.

[10] S. I. Chang, G. Gable, E. Smythe and G. Timbrell, "A delphi examination of public sector ERP implementation issues," in *Proceedings of the Twenty First International Conference on Information Systems,* Brisbane, Australia, 2000, pp. 494-500.

[11] E. N. Loukis and N. Tsouma, "Critical issues of information systems management in the Greek Public Sector," *Information Polity,* vol. 7, pp. 65-83, 2002.

[12] F. Bannister, "Citizen centricity: a model of IS value in public administration," *The Electronic Journal of Information Systems Evaluation,* vol. 5, 2002.

[13] A. M. Chircu and D. H. D. Lee, "E-government: key success factors for value discovery and realisation," *Electronic Government, an International Journal,* vol. 2, pp. 11-25, 2005.

[14] J. Ward, E. Daniel and J. Peppard, "Building Better Business Cases for IT Investments," *MIS Quarterly Executive,* vol. 7, pp. 1-15, 2008.

[15] J. R. Gil-García and T. A. Pardo, "E-government success factors: Mapping practical tools to theoretical foundations," *Government Information Quarterly,* vol. 22, pp. 187-216, 2005.

[16] R. Heeks and S. Bailur, "Analyzing e-government research: Perspectives, philosophies, theories, methods, and practice," *Government Information Quarterly,* vol. 24, pp. 243-265, 2007.

[17] M. Yildiz, "E-government research: Reviewing the literature, limitations, and ways forward," *Government Information Quarterly,* vol. 24, pp. 646-665, 2007.

[18] R. L. Baskerville and A. T. Wood-Harper, "A critical perspective on action research as a method for information systems research," *Journal of Information Technology,* vol. 11, pp. 235-246, 1996.

[19] R. L. Baskerville and A. T. Wood-Harper, "Diversity in information systems action research methods," *European Journal of Information Systems,* vol. 7, pp. 90-107, 1998.

[20] R. M. Davison, M. G. Martinsons and N. F. Kock Jr., "Principles of canonical action research," *Information Systems Journal,* vol. 14, pp. 65-86, 2004.

[21] J. McKay and P. Marshall, "The dual imperatives of action research," *Information Technology & People,* vol. 14, pp. 46-59, 2001.

[22] L. Mathiassen, "Collaborative practice research," *Information Technology & People,* vol. 15, pp. 321-345, 2002.

[23] S. Eckartz, M. Daneva, R. Wieringa and J. van Hillegersberg, "Cross-organizational ERP management: How to create a successful business case?" in *24th Annual ACM Symposium on Applied Computing,* Honolulu, Hawaii, USA, 2009, pp. 1599-1604.

[24] S. Eckartz, C. Katsma and M. Daneva, "The Inter-organizational Business Case in ES Implementations: Exploring the Impact of Coordination Structures and Their Properties," *ENTERprise Information Systems,* pp. 188-197, 2010.

[25] H. F. Cervone, "Developing the business case for a digital library project," *OCLC Systems & Services: International Digital Library Perspectives,* vol. 24, pp. 18-21, 2008.

[26] J. Braaksma, A. Commandeur and A. C. E. Berghout, "The business case for (ICT) investment evaluation in nonprofit organisations," in *Proceedings of the 13th European Conference on Information Technology Evaluation,* Genoa, Italy, 2006, pp. 91-102.

[27] J. W. Ross and C. M. Beath, "Beyond the business case: New approaches to IT investment," *MIT Sloan Management Review,* vol. 43, pp. 51-59, 2002.

[28] J. Ward and E. Daniel, *Benefits Management: Delivering Value from IS & IT Investments.* Chichester, UK: John Wiley, 2005.

[29] D. Dufner, L. M. Holley and B. J. Reed, "Can private sector strategic information systems planning techniques work for the public sector?" *Communications of the Association for Information Systems,* vol. 8, pp. 413-431, 2002.

[30] A. M. Chircu and H. D. Lee, "Understanding IT investments in the public sector: The case of e-government," in *The Proceedings of the Ninth American Conference on Information Systems,* Tampa, FL, 2003, pp. 792-800.

[31] S. Fernandez and H. G. Rainey, "Managing successful organizational change in the public sector," *Public Adm. Rev.,* vol. 66, pp. 168-176, 2006.

[32] P. A. Nielsen and J. S. Persson, "IT management in local government: Engaged problem formulation," in *Proceedings of the Thirty First International Conference on Information Systems,* St. Louis, MO, 2010, pp. 12.

[33] R. K. Yin, *Case Study Research: Design and Methods.* Thousand Oaks, Ca: Sage publications, 2003.

[34] P. A. Nielsen, "IS action research and its criteria," in *Information Systems Action Research: An Applied View of Emerging Concepts and Methods*, N. Kock, Ed. Springer, 2007, pp. 355-375.

[35] S. Spall, "Peer Debriefing in Qualitative Research: Emerging Operational Models," *Qualitative Inquiry,* vol. 4, pp. 280-292, 1998.

[36] L. O. Jepsen, L. Mathiassen and P. A. Nielsen, "Back to thinking mode: diaries for the management of information systems development projects," *Behaviour & Information Technology,* vol. 8, pp. 207-217, 1989.

[37] Great Britain. Office of Government Commerce, *Managing Successful Projects with PRINCE2.* The Stationery Office, 2002.

[38] L. R. Vijayasarathy and D. Turk, "Agile Software Development: A Survey of Early Adopters," *Journal of Information Technology Management,* vol. 19, pp. 1-8, 2008.

[39] T. Dybå and T. Dingsøyr, "Empirical studies of agile software development: A systematic review," *Information and Software Technology,* vol. 50, pp. 833-859, 2008.

[40] D. J. Reifer, "How good are agile methods?" *IEEE Software,* vol. 19, pp. 16-18, 2002.

[41] K. S. Cameron and R. E. Quinn, *Diagnosing and Changing Organizational Culture: Based on the Competing Values Framework.* Jossey-Bass Inc Pub, 2005.

[42] J. P. Kotter, *Power and Influence.* New York: The Free Press, 1985.

[43] C. Ashurst, N. F. Doherty and J. Peppard, "Improving the impact of IT development projects: the benefits realization capability model," *European Journal of Information Systems,* vol. 17, pp. 352-370, 2008.

[44] V. Kasi, M. Keil, L. Mathiassen and K. Pedersen, "The post mortem paradox: a Delphi study of IT specialist perceptions," *European Journal of Information Systems,* vol. 17, pp. 62-78, 2008.

[45] C. Castelfranchi, "Commitments: From individual intentions to groups and organizations," in *Proceedings of the First International Conference on Multi-Agent Systems (ICMAS-95),* 1995, pp. 41–48.

[46] G. Pan, S. L. Pan, M. Newman and D. Flynn, "Escalation and de-escalation of commitment: a commitment transformation analysis of an e-government project," *Information Systems Journal,* vol. 16, pp. 3-21, 2006.